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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10784,749	02/23/2004	David G. Clash	SP-0528.2 US	2234

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EXAMINER

DOVE, TRACY MAE

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 03/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/784,749

Applicant(s)

CLASH ET AL.

Examiner

Tracy Dove

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 February 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 20-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 20-22 and 25-39 is/are rejected.
- 7) ☒ Claim(s) 23 and 24 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2/23/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: IDS 3/30/04.

DETAILED ACTION

Information Disclosure Statement

The information disclosure statements (IDS) submitted on 2/23/04 and 3/30/04 have been considered by the examiner.

Claims Analysis

Claims 22-24 recite the term “porosity”, which is defined as the intraparticle void volume of a single zinc particle (see specification, page 6, lines 18-19).

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 35-39 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This application is a continuation of 09/403,965, which does not support 5wt% of uniformly shaped zinc particles contained in the anode of the electrochemical cell. Examiner suggests the claims be amended in accordance with the disclosure on page 3, lines 22-28. For example, claim 35 should be amended to recite “said uniformly shaped zinc particles comprise twenty weight percent or less of the zinc in said anode”.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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Claims 35-39 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 35-39 recite the limitation "the zinc". There is insufficient antecedent basis for this limitation in the claims.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 20-22, 25-39 are rejected under 35 U.S.C. 102(b) or 102(e) as being anticipated by Urry, US 6,022,639.

Urry teaches a zinc anode for an electrochemical cell comprising zinc flakes (uniformly shaped particles). The zinc flakes can have thicknesses of 0.001 inch, with average length of 0.024 inch and width of, e.g., 0.024 to 0.040 inch (col. 3, lines 28-30). The tap density of the zinc flakes is 0.82 g/cc (col. 3, lines 40-42). The flakes can be present in an amount between about 5 percent by weight to about 70 percent by weight of the total zinc concentration (col. 4, lines 24-26). The zinc content in the anode gel should be between about 0.36 grams of zinc per cm³ of anode gel volume and 1.56 grams of zinc per cm³ of anode gel volume (col. 4, lines 64-67). In a preferred embodiment, the zinc anode gel comprises 25 volume percent zinc wherein

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the zinc flakes are present at 20 weight percent of the total weight of the combination of zinc powder and zinc flakes. The zinc flakes are zinc alloys comprising 500 ppm lead coated with indium (no mercury). In Example 1 the zinc anode gel having 9 volume percent (less than 62 weight percent) zinc is prepared using only zinc flakes having an average dimension of 0.024x0.024x0.001 inch with gelled electrolyte solution (col. 5, lines 40-59). Example 2 teaches a zinc anode gel comprising zinc flakes having an average dimension of 0.024x0.024x0.001 inch combined with conventional zinc powder. The total amount of zinc in the gel is 63 weight percent which is equivalent to about 25.2 volume percent (col. 5, lines 61-col. 6, lines 9). Note Figure 2. Zinc particles have craggy, or minor protrusions, and irregular surface characteristics (1:67-2:2). The zinc particles of Urry are not porous (the porosity is consistently about zero).

Regarding claim 25, the zinc flakes can have varying shapes, such as scale-like or chip-like layers of zinc, having various geometries such as discs (biscuit), squares, troughs, triangles, rhomboids, rectangles and the like. The zinc flakes may also have various configurations, such as flat, bent, curled or otherwise shaped or configured. The desired configurations can be selected based on processability or other optimizing characteristics (3:11-18).

Regarding claims 35-39, the endpoint of 5 weight percent of the range of zinc flakes based upon the total zinc concentration of the anode anticipates these claims. Furthermore, Urry teaches a preferred content of zinc flakes in the range of between about 5 and 30 weight percent of the total combined weight of the zinc flakes and the zinc powder (clms 5 and 17).

Thus the claims are anticipated.

Allowable Subject Matter

Claims 23 and 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the claims are directed toward an electrochemical cell having a non-mercury added zinc anode comprising uniformly shaped zinc particles having consistent surface finishes. The uniformly shaped zinc particles have a consistent porosity characteristic of greater than 25 percent.

The prior art does not teach a zinc anode having uniformly shaped zinc particles having an intraparticle porosity of greater than 25 percent. The zinc particles of Urry are solid and the prior art does not suggest providing zinc particles with an intraparticle porosity of greater than 25 percent.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tracy Dove whose telephone number is 571-272-1285. The examiner can normally be reached on Monday-Thursday (9:00-7:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pat Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Tracy Dove', with a long horizontal flourish extending to the right.

Tracy Dove
Patent Examiner
Technology Center 1700
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March 4, 2005